

**Method for processing a material and packing container
for carrying out this method**

Technical field

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The invention is based on a method for processing a material according to the preamble of the first claim. The invention is likewise based on a packing container for carrying out the method according to the preamble of the independent device claim.

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Prior art

It is often the case that materials, in particular powdered materials which are intended to be mixed with a second material, in particular with a liquid, for their processing are sold in a bag. For the purpose of mixing with the second material, the bag is opened and the quantity of material to be mixed is put into a mixing vessel. After that, the second material or material mixture is added and the materials are mixed with one another in order to process the mixture further.

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One example of such a material is, for example, concrete or mortar. The desired quantity of concrete or mortar is taken from the bag and put into a mixing vessel. For small quantities, a pot made of an elastic plastic material is normally used for this purpose. Water is then added as the second material and mixed intimately with a spatula, and the mixture is then processed by means of the spatula or a trowel. However, this procedure is complicated, in particular for handymen, and additional tools are needed.

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In the foodstuffs sector, for example soups or creams in powdered form are sold in bags. In order to consume the products, the bag is opened and the powder is put into a container, where water or milk is then added, is

stirred and the product can then be eaten after a little while. The consumer of the products thus needs additional utensils in order to be able to prepare the products.

- 5 For soup noodles, it is known to provide these in a pot made of hard plastic, where hot water can then be poured directly into this pot and the noodles can be consumed directly from the pot. However, these packs need a large volume and are very expensive.

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Summary of the invention

- The invention is based on the object, in a method for processing a material and a packing container for
15 carrying out the method of the type mentioned at the beginning, of avoiding the disadvantages of the prior art and of providing a method and a device which permit simple processing of the material without additional aids.

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According to the invention, this is achieved by the features of the first claim and the independent device claim.

- 25 The advantages of the invention are to be seen, inter alia, in that the materials can be mixed directly in the packing container, that is to say in the bag, and then the mixture can be processed directly from the bag. The bag has only small dimensions for the storage and
30 thus takes up little storage space. Following the addition of other materials, the material mixture can be mixed directly in the bag after the latter has been closed. After the top part has been torn off, the mixture can be processed directly from the remaining,
35 lower part of the bag. Thus, no other tools, that is to say containers, are needed. Following the processing of the mixture, the lower part of the bag with any mixture residues which might remain can be

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thrown away. Complicated cleaning of tools or containers is dispensed with, which simplifies the application considerably.

5 Further advantageous refinements of the invention emerge from the subclaims.

For example, it is particularly expedient if the tool needed for the further processing of the mixture is arranged detachably on the bag.

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Brief description of the drawing

In the following text, by using the drawings, exemplary embodiments of the invention will be explained in more
15 detail. In the various figures, identical elements are provided with the same reference symbols.

Fig. 1 shows a view from the side of a bag according to the invention;

20 fig. 2 shows a view from above of a bag according to the invention without filling.

Only the elements essential to an immediate understanding of the invention are shown.

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Ways to implement the invention

A packing container 1, designated a bag in the following text, for holding a material is shown in figs.
30 1 and 2. The bag 1 substantially comprises two wall elements 2 and 3 and a closable opening 4. The opening 4 is closed by means of a lid 5. The two wall elements 2 and 3 are connected circumferentially to each other and to the opening 4 by means of a welded seam 6, so
35 that an internal space sealed off from the outside is produced. A bottom element 7 should advantageously additionally be arranged in the bottom region of the bag 1, by means of which element the bag stands

securely, for example on a table or rack. The bottom element 7 is welded to the wall elements 2, 3 and can be welded to the wall elements 2 and 3 by means of additional welds 8 in the corner regions of the bottom
5 region, in order to reinforce and stabilize these corner regions.

Depending on the application, the wall of the bag can consist of various materials. Usually, a plurality of
10 layers of different materials are combined for each wall element 2, 3 and bottom element 7. For example, the wall of the bag can consist of a polyethylene which is laminated with polyethylene terephthalate (PET). If moisture-sensitive materials in particular are to be
15 kept in the bag, additional vapor barriers may possibly have to be provided. The lid and the filling opening of the bag can be fabricated from polyethylene or polypropylene, for example.

The welding of the bag can be carried out by known
20 methods, for example thermally or by means of ultrasound.

Underneath the filling opening, the bag advantageously has a tear-open device comprising a notch 7 and a score
25 10 on the outer wall of the bag. The score is advantageously produced by means of a laser but can also be carried out by a mechanical cutting device or other methods. The film of the bag is scored but not cut through. The scoring must not be carried out so
30 intensely and deeply that the bag tears along the scoring on its own but must be such that the bag can be torn open by hand.

Via the opening 4, the second material, for example
35 water, is put in in the appropriate quantity. The quantity to be put in can be indicated by means of a filling mark 11 on the bag but, depending on the bag content, it can also be more expedient to measure in

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advance the quantity of the second material to be added in and then to add it. The air is then pressed out of the bag, the bag is closed with the lid and shaken and possibly kneaded until the desired thorough mixing has
5 been achieved. After that, the bag is torn open by means of the tear-open device and the upper part is torn off, it being possible for this part to be thrown away. Instead of tearing the bag open by means of the tear-open device, the tear-open device can also be
10 omitted. The upper part of the bag can then, for example, be cut off by means of a cutting tool. In any case, a cutting mark must then be applied to the bag, in order that it is clear where the upper part must be cut off.

15 The mixture obtained can then be processed, the remaining part serving as a processing container. By means of the specifically configured bottom region, the remaining part stands securely and the remaining part
20 of the bag has a cup shape. A spatula or another tool for processing the content of the bag can be arranged on the bag, for example being adhesively bonded detachably to the outer side of the bag. By means of this spatula, the mixture can then be
25 processed. Following the processing of the mixture, the bag can then simply be thrown away with the spatula. Thus, no additional tools are needed, nor do tools have to be cleaned.

30 The second material can also be supplied in a second bag at the same time, so that in each case an exact mixing ratio can be achieved. The use of a second bag is advantageous in particular when the second material used is not water or materials which are similarly
35 easily available.

Following the addition of the second material from the second bag, or before this, a third material can also be added, for example water or a material from a

further bag. This is advantageous in particular if, for example in the event of premature mixing of different materials, the ability of the materials to be stored is reduced, for example in order to avoid a premature chemical reaction. It goes without saying that any further desired substances can be added as described previously.

Following the addition of the second material and possible further materials from the second or further bags into the first bag, the procedure is exactly as described above; if appropriate pre-mixtures can also be produced in the bags used.

Example 1:

For the application in the building sector, a powdered mortar or concrete mixture can be provided in the bag. Such mortar mixtures are generally known. As the second material, a previously measured quantity of water is added via the opening 4. After that, the excess air is pressed out of the bag, the bag is closed and the bag is shaken and kneaded until an intimate mixture is produced. The upper part of the bag with the opening 4 is torn off by means of the tear-off device. A spatula fixed detachably to the bag has been removed from the bag before the addition of the water. By means of this spatula, the mortar mixture which is now ready to use can be processed directly from the remaining, lower part of the bag. Any possible residues of the mortar mixture are thrown away with the lower part of the bag.

Example 2:

In a manner analogous to example 1, a mortar mixture is provided in the bag according to the invention. Concrete additives are provided in a second bag which can have smaller dimensions than the first bag. First of all, water is now put into the second bag, the bag

is closed and the additives are dissolved or dispersed. After that, the content of the second bag is poured into the first bag and in any case filled with water as far as the filling mark. After that, the further
5 procedure corresponds to example 1 and the mixture is processed.

Example 3:

For the cosmetics industry, for example a powdered face
10 mask can be provided in the bag. In a manner analogous to example 1, water is added, mixed and the mixture obtained in this way is processed directly from the bag, that is to say is applied. A spatula fitted to the bag can likewise be used for the application.

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Example 4:

As an example from the foodstuffs industry, dried meals can be contained in the bag, for example pasta with a powdered sauce. Warm or hot water is then added to the
20 bag, is mixed and the upper part of the bag is removed. Using a fork and/or spoon detachably fixed to the bag, the meal can then be consumed directly from the remaining part of the bag after an appropriate waiting time.

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Example 5:

A resin, for example an epoxy resin, is provided in a first bag. A hardener is provided in a second, smaller bag. The hardener is poured from the second bag into
30 the first bag, the first bag is closed after the air has been pressed out. After that, the first bag is shaken and possibly kneaded in order to achieve an intimate mixture. The upper part of the bag with the opening 4 is torn off by means of the tear-off device.
35 A spatula detachably fixed to the bag has been removed from the bag before the addition of the hardener. By means of this spatula, the resin mixture, which is now ready to use, can be processed from the bottom part of

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the bag. Any residues of the resin mixture are thrown away with the lower part of the bag.

Of course, the invention is not restricted to the
5 exemplary embodiments shown and described. The bag
according to the invention is suitable for all possible
materials and can be used wherever two or more
materials have to be mixed with each other and the
mixture then has to be processed. Thus, the invention
10 can be used in any desired areas of application.

List of designations

- 1 Packing container/bag
- 2 Wall element
- 3 Wall element
- 4 Opening
- 5 Lid
- 6 Weld
- 7 Bottom element
- 8 Additional weld
- 9 Notch
- 10 Score
- 11 Filling mark